

REMARKS

Claims 1-20 are in the application.

Claims 1-18 stand rejected.

Claims 19 and 20 are subject to restriction and election requirement

Claims 1- 3 and 9-14 stand rejected under 35 U.S.C. 103(a) as obvious over Dahlgren (U.S. Patent 5,078,465)

Claims 4-8 stand rejected under 35 U.S.C. 103(a) as obvious over Dahlgren in view of Chen (U.S. Patent 6,031,948).

Claims 15-18 stand rejected under 35 U.S.C. 103(a) as obvious over Dahlgren in view of Lightstone et al (U.S. Patent 4,449,781).

The Examiner is thanked for the Examination of this application.

Applicant affirms the election without traverse to prosecute invention 1, claims 1-18.

The objection to the drawings is not understood. It is believed that the Examiner did not complete the second sentence of Paragraph 7, thereby making the nature of the objection to the drawings ambiguous. Applicant requests clarification of the objection.

If the Examiner's objection is that the steps set out in the claims are not shown in the drawing, the Examiner's objection is traversed. It is submitted that the detailed drawing figures show each of the elements contained in claims 1-18. Specifically, the orienting steps of Claim 1 are shown by display 731 and pattern 733 shown in FIG. 7; placing the fiber in side by side relationship is shown in FIG. 9; fusing is shown in FIG. 8; tapering is shown in FIGs. 11, 12, 13; moving the heat source is shown in FIG. 8. Each and every element of each and every claim may be found in the drawings.

The objection to claim 1 is traversed.

Claim 1 recites, inter alia:

“fusing said first portion of said first and second optical fibers with heat from a heat source to produce a fused portion;
tapering said fused portion to produce a predetermined taper over said fused portion; and
moving said heat source repeatedly over a predetermined fixed distance during said fusing and tapering steps.”

The Examiner states that Dahlgren "teaches using a heat source to heat a predetermined fixed distance during said fusing and tapering steps... However, Dahlgren does not specifically teach wherein the fusion is carried out by moving said heat source repeatedly over the fixed distance."

The Examiner attempts to fill this void in the teachings of Dahlgren by stating that it is obvious/well known to those of ordinary skill in the art ... "that heating a fixed region of a bare fiber for fusion and tapering process **requires heat to be repeatedly** applied to that region...." (emphasis added).

It is respectfully submitted that it was not well known in the art to move the heat source repeatedly over a predetermined distance. It is requested that the Examiner point to some objective evidence such as a reference in the literature that supports his contention that it was well known to provide such a step in the manufacture of optical couplers. There is no suggestion in any of the references of record to provide heat in the manner claimed for fusion and tapering.

Accordingly, it is respectfully submitted that claim 1 is not shown, taught or made obvious by the Dahlgren reference.

Claim 2, 3, and 9-14 all depend from claim 1, and for the same reason that claim 1 is not shown, taught or made obvious by Dahlgren, Claims 2, 3, and 9-14 are likewise not shown, taught or made obvious by Dahlgren.

In addition, claim 11 recites, inter alia: "tapering said first optical fiber jacket adjacent each end of said first portion to produce first and second tapered portions."

Although the Examiner state that Dahlgren teaches "tapering the first optical jacket", a careful review of Dahlgren did not locate any such teaching. In fact, drawings 1A, 1B, 1C show that the optical jacket of fibers 1 and 2 are not at all tapered. Accordingly, Dahlgren teaches away from the present invention. For this additional reason claim 11 is not shown, taught or made obvious by Dahlgren.

Similarly, claim 12 recites: "tapering said second optical fiber jacket adjacent each end of said first portion to produce first and second tapered portions." As discussed above, Dahlgren teaches away from tapering the jackets of the fiber, and for this additional reason claim 12 is not shown, taught or made obvious by Dahlgren.

Claims 13 and 14 depend from claims 11 and 12 and for the additional reasons that claims 11 and 12 are not shown, taught or made obvious by Dahlgren, Claims 13 and 14 are not shown, taught or made obvious by Dahlgren.

In addition, claim 13, recites: "bonding said first optical fiber first tapered portion to said second optical fiber first portion; and bonding said first optical fiber second tapered portion to said second optical fiber second tapered portion." Dahlgren is silent on tapered portions and

accordingly is also silent on bonding tapered portions. For this additional reason, Dahlgren does not show, teach or make obvious claim 13 or claim 14 which depends from claim 13.

Turning now to the Examiner's rejection of Claims 4-8, it is believed that the Examiner has misread the claims. The Examiner refers "illuminating ... with heating source", "heating ... using a laser source", and "using laser light for heating and monitoring".

Claim 4 recites, inter alia: "illuminating a respective one fiber of said first or second optical fibers with a laser source; rotating said respective one fiber around its respective longitudinal axis; monitoring the interference pattern produced in said respective one fiber; and ceasing said rotating when said interference pattern corresponds to a predetermined pattern." Nothing in claim 4 recites illuminating with a heating source, heating with a laser source or using laser light for heating and monitoring. Accordingly, it is believed that the Examiner's rejection of claims 4-8 is not well founded.

In addition, Claim 4 depends from Claim 1, and for the same reasons that Claim 1 is not shown, taught or made obvious by Dahlgren, Claim 4 is not shown, taught or made obvious.

It is noted that the Examiner cites US Patent 4,948, 217 for showing that fibers are "rotated/worked/twisted while heating the fusion region...." However, that reference teaches having a stationary heat source and drawing the fibers once through the heat zone, thus teaching away from the present invention.

The Examiner also states that "Dahlgren does not specifically teach wherein the above heating is implemented using a laser source and monitoring the interference pattern produced in said respective one fiber; and ceasing rotating when said interference pattern corresponds to a predetermined pattern... These limitations are taught by Chen." However, the Examiner does not point to any passage in Chen. The undersigned has reviewed the Chen reference and finds no place where Chen contains such teachings. Accordingly, Claim 4 is not shown, taught or made obvious by Dahlgren in combination with Chen.

Claims 5 through 8 depend from claims 1 and 4 and for the same reason that claims 1 and 4 are not shown, taught or made obvious by Dahlgren alone or in combination with Chen, Claims 5-8 are not shown, taught or made obvious by Dahlgren alone or in combination with Chen.

It is also noted that although the Examiner points to various attributes of couplers described in Chen, it is not seen where Chen teaches the use of lasers in the manufacture of such devices.

Turning now to Claims 15-18, Claim 15 recites, inter alia: "tapering said first optical fiber jacket adjacent to each end of said first optical fiber first portion to produce first and second tapered jacket portions;" and "tapering said second optical fiber jacket adjacent to each end of said second optical fiber first portion to produce first and second tapered jacket portions."

INVENTOR: YELLAPU ANJAN

attorney docket: MPI-68

TITLE: MANUFACTURE OF POLARIZATION MAINTAINING OPTICAL FIBER COUPLER

The Examiner states that Dahlgren teaches tapering the first and second jacket portions and points to FIG. 1 and col. 1, lines 47-50. However, nothing in any of the drawing figures nor in the cited passage shows, teaches or suggests tapering of the jacket portions. It is believed that the Examiner has misread the Dahlgren reference. > A

On this basis alone, Claims 15-18 are not shown, taught or made obvious by Dahlgren in combination with any reference.

The Examiner states that "Dahlgren does not specifically teach ... removing... a portion of jacket." The Examiner states that the Lightstone reference teaches that limitation. However, Lightstone does not show any fiber having a jacket. Rather Lightstone teaches a fiber having a cladding (which is light transmissive) that is reduced in thickness in the area that the two fibers are fused. > A

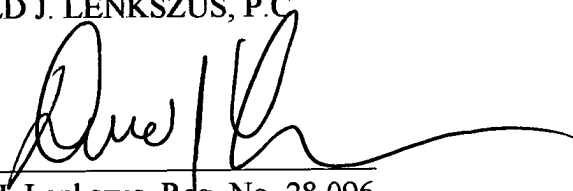
Accordingly, nothing in Lightstone fills the voids of Dahlgren.

It is respectfully submitted that all of the claims presently in the application are in condition for allowance. None of the references, taken singly or in combination, show, teach or make obvious applicant's novel invention.

It is believed that this amendment places the application in condition for allowance. Reexamination and reconsideration are requested. An early notice of allowance and passage to issue are requested.

Respectfully Submitted,
DONALD J. LENKSZUS, P.C.

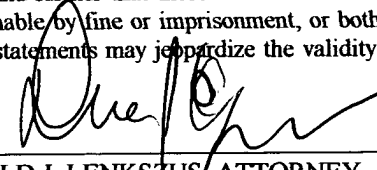
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By: 
Donald J. Lenkszus, Reg. No. 28,096
P.O. Box 3064
Carefree, AZ 85377-3064
Telephone: (602) 463-2010
Facsimile: (480) 575-1321

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DONALD J. LENKSZUS, ATTORNEY